Independent claim 1 sets forth a "resin powder for a dermatologic composition, which comprises resin particles having an average volume particle size of 2.0 to 20.0 μm, a shape factor SF1 of 110 to 140 and an average volume particle size distribution GSDv of 1.3 or less." Claims 2-4 and 7-17 depend, directly or indirectly, from claim 1.

The Office Action cites Yasuda as disclosing a resin powder composition comprising polystyrene particles of 4.8 micrometers and titanium dioxide. Yasuda is further cited as teaching that the particle size distribution and the actual particle size can be adjusted by adjusting the polymerization conditions to achieve specific powder properties. The Office Action admits that Yasuda does not teach shape factor, average volume particle size distribution, surfaceness index or volumetric ration, but asserts that, because Yasuda teaches modifying the size of the particles, it would have been obvious to modify Yasuda's teachings to achieve the shape factor, average volume particle size distribution, surfaceness index and volumetric ratio of claims 1-4 and 7-17. Applicants respectfully disagree.

Applicants respectfully submit that Yasuda does not teach or suggest resin particles having a shape factor SF1 of 110 to 140, as set forth in claim 1, and further does not teach or suggest modifying the particles taught by Yasuda to obtain the shape factor of claim 1.

Yasuda teaches that the mean particle diameter and the particle size distribution of its synthetic macromolecular particles may be controlled by adjusting the polymerization conditions. Specifically, Yasuda discloses that polymerization reagents and conditions such as emulsifiers, suspension protective agents, initiators, emulsification distribution extent, temperature and time, can be varied to adjust the mean particle diameter and the particle size distribution. See Yasuda, paragraph [0010].

However, these variables cannot be adjusted to control the shape factor of particles. As discussed in the instant specification, the shape factor SF1 is a numerical representation of the shape of the particles. See Specification, page 6, line 18 - page 7, line 11. The closer the

shape factor is to 100, the more spherical the particles. See Specification, page 6, line 18 - page 7, line 11. The shape of the particles is determined by controlling the agglomeration and fusion of the particles. See Specification, page 19, line 21 - page 20, line 19.

Yasuda does not provide any disclosure or suggestion with respect to agglomeration and/or fusion of its particles. Rather, Yasuda states that the polymerization techniques discussed therein, emulsion polymerization, suspension polymerization and precipitate polymerization have "the advantage [that] the polymer is carrying out particle shape promptly." See Yasuda, paragraph [0010]. That is, the particle is in the desired shape immediately after polymerization. Yet these disclosed polymerization techniques produce generally spherical particles. See Specification, page 1, lines 23-25; page 19, line 21 - page 20, line 19. For example, in precipitate polymerization, the polymer generated by the polymerization reaction is insoluble in the solvent, and so precipitates out as an oil. Precipitated oils form spherical droplets to reduce the surface area contacting the solvent. See, e.g., Yasuda, paragraph [0003].

Thus, Yasuda does not disclose or suggest modifying its particles to obtain particles having shape factor SF1 of 110 to 140.

Further, Yasuda does not teach or suggest the advantages of controlling the shape factor SF1 of the resin particles within the range set forth in claim 1. As discussed in the instant specification, resin particles having a shape factor within the range of 110 to 140, as set forth in claim 1, have good spreadability and skin adhesion. In particular, if the shape factor SF1 is less than 110, the particles have a shape near that of a true sphere. See Specification, page 7, lines 12-13. Such particles have good spreadability for application purposes, but do not have the skin adhesion necessary for a cosmetic composition. See Specification, page 7, lines 14-20. When the shape factor SF1 is greater than 140, however, the surface of the resin particles is uneven, which results in improved skin adhesion but

reduces spreadability to an unacceptable level. See Specification, page 7, lines 21-25. Yasuda does not teach or suggest that both good spreadability and good skin adhesion may be simultaneously obtained by controlling the shape factor of the resin particles.

The Office Action also asserts that "it would have been an obvious matter of design choice to exemplify powders with an SF1 of 110-140, GSDv of 1.3 or less [as set forth in claim 1], volume particle size of 20.0 μm, or greater [is] 3% or less [as set forth in claim 4], and a surfaceness index of 2 or less [as set forth in claim 2], since such a modification would have involved a mere change in the size of a component." Applicants respectfully disagree with this assertion.

Applicants respectfully submit that, as discussed above, the shape factor SF1 is not merely a feature of the size of the particle, but a measure of the surface irregularity. See Specification, page 6, line 18 - page 7, line 25. Controlling the shape factor, and obtaining the benefits associated with controlling the shape factor to be within the range set forth in claim 1, requires that the agglomeration and fusion procedures be controlled, not the particle size. See Specification, page 19, line 21 - page 20, line 19. As discussed above, Yasuda does not teach or suggest these procedures or means of controlling them.

Further, Applicants respectfully submit that the concepts of "GSDv," "volumetric ratio of the resin particles having a volume particle size of 20μ or greater" and the "surfaceness index" are different technical concepts from particle size, and control of these features does not correspond merely to a change in the particle size. In particular, the "GSDv" indicates a distribution of particle sizes; the "volumetric ratio of the resin particles having a volume particle size of 20μ or greater" refers to the content of particles having at least a particle size of 20μ or greater, and the "surfaceness index" is a reflection of the smoothness of the particle surface. See Specification, page 5, line 24 - page 6, line 17; page 8, line 17 - page 9, line 17; page 10, lines 14-25.

While particle size can be controlled by controlling the polymerization conditions and agglomeration time, "GSDv" "volumetric ratio of the resin particles having a volume particle size of 20μ or greater " and the "surfaceness index" are controlled differently. "GSDv" and the "volumetric ratio of the resin particles having a volume particle size of 20μ or greater" are controlled by the combination of the stirring conditions, the agglomeration temperature and the coagulant, but not the agglomeration time. See Specification, page 19, line 21 - page 20, line 19. The "surfaceness index" is controlled by the pH and temperature during agglomeration.

Because Yasuda does not disclose or suggest agglomerating resin particles, or controlling the conditions of resin particle agglomeration, one of ordinary skill in the art would not be motivated by the teachings of Yasuda to agglomerate the resin particles taught by Yasuda or to vary the conditions of agglomeration in order to obtain particles meeting the limitations of claim 1 or its dependent claims.

Thus, Applicants respectfully submit that claim 1 and its dependent claims 2-4 and 7-17 are patentable over Yasuda. Reconsideration and withdrawal of this rejection are respectfully requested.

B. Claims 5 and 6

The Office Action rejects claims 5 and 6 under 35 U.S.C. §103(a) over Yasuda in view of Japanese Patent Application Publication JP 06-070702 (JP '702). Applicants respectfully traverse the rejection.

Claim 1 is as set forth above. Claims 5 and 6 depend from claim 1 and include the additional limitations that "the resin has a number-average molecular weight of 3,000 to 20,000" and that "the resin has a weight-average molecular weight of 6,000 to 100,000," respectively.

The Office Action applies Yasuda to claims 5 and 6 in the same manner as to claim 1, discussed above. The Office Action admits that Yasuda does not state the molecular weight of the resin.

Because Yasuda does not disclose or suggest the number-average molecular weight or the weight-average molecular weight of the resin and for at least the same reasons discussed above with respect to claim 1, Applicants respectfully submit that Yasuda would not have rendered claims 5 and 6 obvious. JP '702 does not remedy the shortcomings of Yasuda.

The Office Action cites to the teaching of JP '702 of a powder having a molecular weight of 500-100,000 for use in cosmetic preparations, and asserts that the molecular weight of polystyrene can be varied by simple manipulation of the number of repeating units.

JP '702, like Yasuda, fails to teach or suggest regulating the shape factor SF1 to 110 to 140. JP '702 does not teach or suggest the agglomeration of resin particles or provide any motivation for altering and controlling the shape factor SF1. Further, JP '702 does not teach or suggest any benefits provided by controlling the shape factor SF1, such as the advantageous effects of simultaneously attaining spreadability upon application and affinity to the skin by using the particulate resin as set forth in claim 1.

In addition, JP '702, like Yasuda, does not teach or suggest the concept of "average volume particle size distribution GSDv," or of controlling the average volume particle size distribution GSDv to be 1.3 or less, as set forth in claim 1.

Further, the silk powder of JP '702 has a particle size of from 30 to 100 μm, which falls outside the average volume particle size of 2.0 to 20.0μm set forth in claim 1. See JP '702, Abstract. JP '702 does not provide any motivation for providing particles outside this disclosed range.

Still further, JP '702 discloses a silk powder having a molecular weight of 500-100,000 that is obtained by decomposing silk fibroin. See JP '702, Title; Abstract. JP '702

teaches this molecular weight for use in foods and cosmetics. However, JP '702 does not disclose or suggest that, by controlling the weight-average molecular weight of the resin in the range of 6,000 to 100,000 and/or the number-average molecular weight of the resin in the range of 3,000 to 20,000 provide advantages for usability and storage because the particles do not soften and agglomerate if the molecular weight is too low, or become too hard if the molecular weight is too high. See Specification, page 11, line 1 - page 12, line 13. Thus, JP '702 does not disclose or suggest the benefits that can be obtained by the narrower range of number-average molecular weight, in claim 5, and weight-average molecular weight, in claim 6.

Because neither Yasuda nor JP '702 disclose or suggest resin particles having shape factor SF1 in the range of 110 to 140, as set forth in claim 1, controlling the shape factor SF1 or the benefits of controlling the shape factor within the claimed range; and do not disclose or suggest "average volume particle size distribution GSDv," or of controlling the average volume particle size distribution GSDv to be 1.3 or less, as set forth in claim 1; and do not disclose or suggest the benefits that can be obtained by the narrower range of number-average molecular weight, in claim 5, and weight-average molecular weight, in claim 6, Applicants respectfully submit that Yasuda and JP '702, individually or in combination, would not have rendered claims 5 and 6 obvious.

Thus, Applicants respectfully submit that claims 5 and 6 are patentable over Yasuda in combination with JP '702. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-22 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

James A. Oliff
Registration No. 27,075

Julie M. Seaman
Registration No. 51,156

JAO:JMS/brc

Date: July 21, 2004

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461